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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/684,388

Applicant(s)

GELVIN ET AL.

Examiner

Aravind K. Moorthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This is in response to the RCE filed on 15 June 2006.
2. Claims 1-70 are pending in the application.
3. Claims 1-70 have been rejected.

#### ***Continued Examination Under 37 CFR 1.114***

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 June 2006 has been entered.

#### ***Response to Arguments***

5. Applicant's arguments filed 15 June 2006 have been fully considered but they are not persuasive.

On page 18, the applicant argues that the examiner has failed to show that Bowman-Amuah suggest coupling a plurality of network elements in a vehicle. The applicant argues that the examiner has not shown where Bowman-Amuah teaches a vehicle bus. The applicant argues that the sections cited by the examiner in Shostack do not even mention the word "vehicle". The applicant argues that the examiner has failed to properly cite a teaching or suggestion in any one of these references of a vehicle prevents the making of a prima facie case.

The examiner respectfully disagrees. The applicant describes a vehicle internetwork as comprising an information and control internetwork for vehicles, including hardware together with a suite of applications. Bowman-Amuah clearly shows in figure 1 that there are multiple

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hardware devices interconnected together. A bus is clearly shown in this figure as well. The examiner asserts that the Shostack reference was not used to teach a “vehicle”. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, by using real-time updates, a user or system administrator is able to implement prevention techniques before a security breach occurs. This enhancement enables the system to be integrated in non-real-time into the computer security software.

On page 19, the applicant argues that the examiner has failed to describe how Shostack teaches a second processor or how Shostack describes processes other than the real-time processes.

The examiner respectfully disagrees. Shostack discloses real-time update processor 54 and the second processor as the vulnerability database working with the real-time processor.

On page 20, the applicant argues that Bergkvist does not describe first and second processors with each processor performing functions as applicant claims. The applicant argues that the examiner has not presented any argument explaining how the Kirby reference relates to first and second speeds as recited in applicant's claim 22.

The examiner respectfully disagrees. The examiner asserts that the Bergkvist reference was not relied upon to teach first and second processors with each processor performing

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functions as applicant claims. Shostack discloses real-time update processor 54 and the second processor as the vulnerability database working with the real-time processor. Kirby discloses transmitting lower volume data traffic on the first dedicated wavelength which is typically slower due to optical/electronic signal conversions and which uses more resources. Higher capacity data transfers are achieved by transmitting data on an assigned carrier wavelength over an established flow path among the optical switches of multiple hybrid switch circuits. Based on high and low volume data traffic, the method and apparatus discussed herein advantageously supports direct and indirect optical data transmissions with as few overall intermediate optical-to-electrical or electrical-to-optical conversions as possible. Kirby discloses lower and higher speeds. This would constitute first and second speeds.

On page 21, the applicant argues that Vasudevan does not suggest synchronism hierarchy as recited in claim 50.

The examiner respectfully disagrees. Vasudevan discloses that the (CDSA-I)<sup>10</sup> supports various modes of security operation, providing different levels of functionality for the applications 16. To support these various modes, a privilege or exemption mechanism 29 is implemented within the architecture. The exemption or privilege mechanism 29 provides differing levels of security services to applications that possess different sets of privileges.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**6. Claim 68 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

Claim 68 is directed towards an electromagnetic medium containing executable instructions. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**7. Claims 1-10, 15-18, 21, 25-32, 34-47 and 52-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 in view of Shostack et al U.S. Patent No. 6,298,445 B1.**

As to claim 1, Bowman-Amuah discloses a method for host vehicle internetworking, comprising:

coupling a plurality of network elements in a vehicle including at least one node and at least one vehicle bus among at least one peripheral electronic device [column 4, lines 48-67];

manipulating node information including configuration and security information [column 74 line 51 to column 75 line 60];

automatically assembling and configuring the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60];

remotely controlling at least one function of the plurality of network elements [column 74 line 51 to column 75 line 60]; and

providing secure interoperability among the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60].

Bowman-Amuah does not teach that at least one node includes at least one gateway node in the vehicle. Bowman-Amuah does not teach a gateway node comprising a first processor performing real-time processes and a second processor performing remaining processes other than the real-time processes.

Shostack et al teaches a node that comprises a first processor performing real-time processes [column 7, lines 37-65] and a second processor performing remaining processes other than the real-time processes [column 10, lines 11-49].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah so that there would have been a gateway node in the vehicle. The gateway node would have comprised a first processor that performed security functions in real-time and a second processor that performed the remaining processes in non-real-time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah by the teaching of Shostack et al because by using real-time updates, a user or system administrator is able to implement prevention techniques before a security breach occurs. This enhancement enables the system to be integrated in non-real-time into the computer security software [column 2, lines 31-47].

As to claim 2, Bowman-Amuah teaches accessing the at least one node and performing at least one function using at least one local development network [column 74 line 51 to column 75 line 60]. Bowman-Amuah teaches that at least one function is selected from a group consisting of upgrading, diagnosing, and programming [column 74 line 51 to column 75 line 60].



As to claim 3, Bowman-Amuah teaches manipulating and transferring entertainment software among the plurality of network elements using at least one local development network. Bowman-Amuah teaches that the entertainment software comprises at least one entertainment feature selected from a group consisting of video, audio, movies, television shows, music, games, and simulations [column 48, lines 28-45].

As to claim 4, Bowman-Amuah teaches that the at least one vehicle bus comprises at least one bus selected from a group consisting of at least one Original Equipment Manufacturer (OEM) bus, at least one Automotive Multimedia Interface Consortium (AMI-C) bus, at least one external network, and at least one local development network [column 4, lines 48-67].

As to claim 5, Bowman-Amuah teaches that at least one vehicle bus comprises at least one legacy automotive bus selected from a group consisting of Audio Control Protocol (ACP) buses and Standard Corporate Protocol (SCP) buses [column 4, lines 48-67].

As to claim 6, Bowman-Amuah teaches coupling at least one peripheral electronic device to at least one OEM bus [column 4, lines 48-67]. Bowman-Amuah teaches that at least one peripheral electronic device is selected from a group consisting of climate control devices, actuator devices, position location devices, Global Positioning System (GPS) devices, communication devices, cellular telephony devices, processing devices, diagnostic devices; modems, video devices, audio devices, multimedia devices, electronic game devices, sensor devices, switch devices, and device subnetworks [column 4, lines 48-67].

As to claim 7, Bowman-Amuah teaches coupling the at least one peripheral electronic device to at least one AMI-C bus, wherein the at least one peripheral electronic device is selected from a group consisting of communication devices, position location devices, GPS devices,

communication devices, pager devices, cellular telephony devices, processing devices, modems, video devices, audio devices, multimedia devices, electronic game devices, personal digital assistants (PDAs), and wireless local area network (LAN) devices [column 4, lines 48-67].

As to claim 8, Bowman-Amuah teaches that at least one node comprises at least one interface port selected from a group consisting of Intelligent Data Bus (IDB-C) ports, MOST ports, Institute of Electrical and Electronics Engineers (IEEE) 1394 ports, On-Board Diagnostic-II (OBD-II) ports, Standard Corporate Protocol (SCP) ports, Audio Control Protocol (ACP) ports, Bluetooth ports, Personal Communications Service (PCS) ports, Global System for Mobile Communications (GSM) ports, and Ethernet ports [column 4, lines 48-67].

As to claim 9, Bowman-Amuah teaches the method further comprising:

hosting the at least one function on a central network element [column 73 line 50 to column 74 line 17];

distributing the at least one function among the plurality of network elements in response to a coupling of additional peripheral electronic devices to the at least one vehicle bus [column 73 line 50 to column 74 line 17].

As to claim 10, Bowman-Amuah teaches that at least one node includes at least one gateway node and at least one port node [column 73 line 50 to column 74 line 17]. Bowman-Amuah teaches that at least one node provides at least one function selected from a group consisting of data processing, data storage, access control, protocol translation, security including service discovery and device authentication, and network control [column 73 line 50 to column 74 line 17].

As to claim 15, Bowman-Amuah teaches that at least one gateway includes a first gateway coupled to a second gateway [column 19, lines 3-41].

As to claim 16, Bowman-Amuah teaches coupling the at least one port node to at least one subnetwork [column 19, lines 3-41].

As to claim 17, Bowman-Amuah teaches coupling a first vehicle bus and a second vehicle bus using the at least one gateway node [column 19, lines 3-41]. Bowman-Amuah teaches that at least one port node couples the at least one vehicle bus to the at least one peripheral electronic device [column 4, lines 48-67].

As to claim 18, Bowman-Amuah teaches that at least one port node comprises at least one device selected from a group consisting of at least one processor, at least one memory cache, at least one wireless modem, at least one network protocol, at least one policy, and at least one wired local area network (LAN) [column 4, lines 48-67].

As to claim 21, Bowman-Amuah teaches enabling operation of the at least one peripheral electronic device within the network using interactions among the at least one port node and at least one corresponding proxy [column 19, lines 3-41]. Bowman-Amuah teaches that the at least one port node comprises at least one port node selected from a group consisting of a serial network interface connector (SNIC) and a public network port (PNP) [column 19, lines 3-41].

As to claim 25, Bowman-Amuah teaches coupling the at least one node to at least one subnetwork comprising at least one device selected from a group consisting of sensor devices, actuator devices, wired network devices, and wireless network devices [column 4, lines 48-67].

As to claim 26, Bowman-Amuah teaches coupling at least one router of the at least one node to the Internet using at least one device selected from a group consisting of at least one bus

and at least one communication device. Bowman-Amuah teaches that the at least one bus is selected from a group consisting of an IEEE 1394 bus, a MOST bus, an IDB-C bus, and an Ethernet bus. Bowman-Amuah teaches that at least one communication device is selected from a group consisting of a Bluetooth modem, an IEEE 802.11 radio, and a mobile telephone [column 4, lines 48-67].

As to claim 27, Bowman-Amuah teaches generating at least one hierarchy of communication alternatives in response to a determined position of a host vehicle [column 20 line 12 to column 21 line 47]. Bowman-Amuah teaches that a selected communication alternative is used to communicate with at least one local site [column 20 line 12 to column 21 line 47].

As to claim 28, Bowman-Amuah teaches controlling data processing using at least one processing hierarchy that controls at least one event selected from a group consisting of data classifications, data transfers, data queuing, data combining, processing locations, and communications among the plurality of network elements [column 20 line 12 to column 21 line 47].

As to claim 29, Bowman-Amuah teaches distributing the at least one function among the plurality of network elements [column 22, lines 44-53].

As to claim 30, Bowman-Amuah teaches that at least one function of the at least one node includes at least one function selected from a group consisting of data acquisition, data processing, communication management, data routing, data security, programming, node operation, protocol translation, network management, and interfacing with at least one

communication physical layer including cellular telephony, wireline telephone, satellite telephony, packet radio, microwave, optical [column 26, lines 12-56].

As to claim 31, Bowman-Amuah teaches distributing data processing functions of at least one peripheral electronic device among at least one other processor selected from a group consisting of the at least one node and the at least one peripheral electronic device [column 4, lines 48-67].

As to claim 32, Bowman-Amuah teaches implementing at least one security method selected from a group consisting of confounder codes, encrypted transmissions, security policy-based communication protocols, blocking coupling with unauthorized devices, and blocking commands from at least one class of device [column 74 line 51 to column 75 line 60].

As to claim 34, Bowman-Amuah teaches that at least one security method further includes at least one device selected from a group consisting of an ignition key, a password device, a security display, and a designated authorization port [column 74 line 51 to column 75 line 60]. Bowman-Amuah teaches that at least one connector is coupled to the designated authorization port to receive authorization for coupling a device to the plurality of network elements [column 74 line 51 to column 75 line 60].

As to claim 35, Bowman-Amuah teaches automatically organizing the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60]. Bowman-Amuah teaches that the automatic organizing comprises automatically controlling data transfer, processing, and storage among the plurality of network elements [column 74 line 51 to column 75 line 60].

As to claim 36, Bowman-Amuah teaches supporting at least one level of synchronization among different subsets of the plurality of network elements [column 28, lines 38-63]. Bowman-Amuah teaches that a first level of synchronization is supported among a first subset of the plurality of network elements [column 28, lines 38-63]. Bowman-Amuah teaches that a second level of synchronization is supported among a second subset of the plurality of network elements [column 28, lines 38-63].

As to claim 37, Bowman-Amuah teaches self-assembling the plurality of network elements [column 28, lines 38-63]. Bowman-Amuah teaches that search and acquisition modes of the at least one node search for participating ones of the plurality of network elements [column 28, lines 38-63]. Bowman-Amuah teaches that a determination is made whether each of the participating ones of the plurality of network elements are permitted to join the vehicle internetwork using a message hierarchy [column 28, lines 38-63]. Bowman-Amuah teaches that the plurality of network elements are surveyed at random intervals for new nodes and missing nodes [column 28, lines 38-63].

As to claim 38, Bowman-Amuah teaches the method further comprising performing service discovery, wherein service discovery comprises:

- synchronizing the at least one node [column 42 line 49 to column 43 line 50];
- authenticating the at least one node [column 42 line 49 to column 43 line 50];
- determining at least one communication mode for the at least one node [column 42 line 49 to column 43 line 50]; and

informing the at least one node of resources available among the plurality of network elements [column 42 line 49 to column 43 line 50].

As to claim 39, Bowman-Amuah teaches collecting data using the at least one node. Bowman-Amuah teaches that at least one operation is performed on the data in response to parameters established by a user, the at least one operation selected from a group consisting of classification, routing, processing, storing, and fusing [column 42 line 49 to column 43 line 50].

As to claim 40, Bowman-Amuah teaches that the data is vehicle diagnostic data. Bowman-Amuah teaches that diagnostic operations are performed in response to the data [column 75 line 38 to column 76 line 37].

As to claim 41, Bowman-Amuah teaches that routing comprises selecting at least one communication type and at least one communication coupling for use in routing the collected data [column 75 line 38 to column 76 line 37].

As to claim 42, Bowman-Amuah teaches that routing comprises selecting at least one data type for routing [column 74 line 51 to column 75 line 37]. Bowman-Amuah teaches selecting at least one of the plurality of network elements to which to route the selected data [column 74 line 51 to column 75 line 37]. Bowman-Amuah teaches selecting at least one route to the selected at least one of the plurality of network elements [column 74 line 51 to column 75 line 37]. Bowman-Amuah teaches routing the selected at least one data type to the selected at least one of the plurality of network elements [column 74 line 51 to column 75 line 37].

As to claim 43, Bowman-Amuah teaches that processing comprises selecting at least one data type for processing, selecting at least one processing type, selecting at least one of the plurality of network elements to perform the selected at least one processing type, and

transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the sensor network [column 74 line 51 to column 75 line 37].

As to claim 44, Bowman-Amuah teaches aggregating processed data for further processing [column 75, lines 37-51].

As to claim 45, Bowman-Amuah teaches the method further comprising:

aggregating processed data [column 75, lines 37-51];

reporting aggregated data to at least one user [column 75, lines 37-51].

As to claim 46, Bowman-Amuah teaches that storing comprises selecting at least one data type for storage, selecting at least one storage type, selecting at least one of the plurality of network elements to perform the selected at least one storage type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the plurality of network elements [column 78 line 56 to column 79 line 25].

As to claim 47, Bowman-Amuah teaches that fusing comprises a first node transmitting at least one query request to at least one other node [column 78 line 56 to column 79 line 25]. Bowman-Amuah teaches that the first node collects data from the at least one other node in response to the at least one query request, and processes the collected data [column 78 line 56 to column 79 line 25].

As to claim 52, Bowman-Amuah teaches that the at least one node includes sensing, processing, communications, and storage devices supporting a plurality of processing and protocol layers [column 57 line 64 to column 58 line 34].



As to claim 53, Bowman-Amuah teaches supporting at least one communication mode selected from a group consisting of wireless communications, wired communications, and hybrid wired and wireless communications, as discussed above.

As to claim 54, Bowman-Amuah teaches coupling the at least one node to the at least one remote computer using the plurality of network elements [column 4 line 48 to column 5 line 7]. Bowman-Amuah teaches that the plurality of network elements include at least one element selected from a group consisting of at least one station gateway, at least one server, at least one repeater, at least one interrogator, and at least one network [column 4 line 48 to column 5 line 7]. Bowman-Amuah teaches that the at least one network includes wired networks, wireless networks, and hybrid wired and wireless networks, as discussed above.

As to claim 55, Bowman-Amuah teaches that the at least one network comprises at least one network selected from a group comprising the Internet, local area networks, wide area networks, metropolitan area networks, and information service stations [column 78 line 56 to column 79 line 25].

As to claim 56, Bowman-Amuah teaches providing remote accessibility using World Wide Web-based tools to data, code, control, and security functions [column 78 line 56 to column 79 line 25]. Bowman-Amuah teaches that data includes signals [column 78 line 56 to column 79 line 25]. Bowman-Amuah teaches that code includes signal processing, decision support, and database elements, and wherein control includes operation of the plurality of network elements [column 78 line 56 to column 79 line 25].

As to claim 57, Bowman-Amuah teaches that the plurality of network elements comprise a plurality of network element sets, as discussed above. Bowman-Amuah teaches that the plurality of network element sets are layered, as discussed above.

As to claim 58, Bowman-Amuah teaches the method further comprising:

assembling a first network having a first node density using at least one node of a first type [column 19, lines 3-41];

assembling a second network having a second node density using at least one node of a second type [column 19, lines 3-41];

overlaying the second network onto the first network [column 19, lines 3-41].

As to claim 59, Bowman-Amuah teaches the method further comprising:

transferring software and data among the plurality of network elements [column 26, lines 12-56],

wherein the transfer is remotely controllable [column 26, lines 12-56];

downloading the software and data from at least one location selected from a group consisting of storage devices of the plurality of network elements, external storage devices, and remote storage devices [column 26, lines 12-56].

As to claim 60, Bowman-Amuah teaches the method further comprising:

managing the plurality of network elements as at least one distributed and active database using at least one distributed resource management protocol [column 78 line 56 to column 79 line 25];

reusing the plurality of network elements among different applications  
[column 78 line 56 to column 79 line 25];

using the plurality of network elements in multiple classes of applications  
[column 78 line 56 to column 79 line 25].

As to claim 61, Bowman-Amuah teaches transferring data among the plurality of network elements using at least one coupling among the at least one node and at least one external network [column 20 line 33 to column 21 line 19]. Bowman-Amuah teaches that the data includes vehicle service data, diagnostic data, maintenance history data, security data, electronic mail, and entertainment software [column 20 line 33 to column 21 line 19].

As to claim 62, Bowman-Amuah teaches transferring data among the plurality of network elements using at least one coupling among the at least one peripheral electronic device and at least one external network, as discussed above. Bowman-Amuah teaches that the data includes vehicle service data, diagnostic data, maintenance history data, security data, electronic mail, and entertainment software, as discussed above.

As to claim 63, Bowman-Amuah teaches coupling the at least one node to at least one diagnostic device of a host vehicle [column 27 line 35 to column 28 line 34].

As to claim 64, Bowman-Amuah teaches that at least one node comprises at least one diagnostic node of a host vehicle [column 27 line 35 to column 28 line 34].

As to claim 65, Bowman-Amuah teaches manipulating at least one data item selected from a group consisting of vehicle assembly data, vehicle maintenance data, vehicle diagnostics data, vehicle position data, vehicle operations profile data, fleet management data, fleet

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reliability analysis data, security system data, entertainment system data, and targeted advertising data [column 27 line 35 to column 28 line 34].

As to claim 66, Bowman-Amuah discloses a method for internetworking, comprising:

coupling a plurality of network elements including at least one electronic device among at least one node and at least one vehicle bus [column 4, lines 48-67];

remotely accessing the plurality of network elements using at least one wireless Internet coupling and at least one remote computer; [column 4, lines 48-67]

manipulating network data including configuration and security data [column 74 line 51 to column 75 line 60]; and

providing secure and private interoperability among the plurality of network elements [column 74 line 51 to column 75 line 60].

Bowman-Amuah does not teach that at least one node includes at least one gateway node in the vehicle. Bowman-Amuah does not teach a gateway node comprising a first processor performing real-time processes and a second processor performing remaining processes other than the real-time processes.

Shostack et al teaches a node that comprises a first processor performing real-time processes [column 7, lines 37-65] and a second processor performing remaining processes other than the real-time processes [column 10, lines 11-49].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah so that there would have been a

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gateway node in the vehicle. The gateway node would have comprised a first processor that performed security functions in real-time and a second processor that performed the remaining processes in non-real-time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah by the teaching of Shostack et al because by using real-time updates, a user or system administrator is able to implement prevention techniques before a security breach occurs. This enhancement enables the system to be integrated in non-real-time into the computer security software [column 2, lines 31-47].

As to claim 67, Bowman-Amuah discloses a computer readable medium containing executable instructions which, when executed in a processing system, cause the processing system to internetwork components by:

coupling a plurality of network elements including at least one node and at least one vehicle bus among at least one peripheral electronic device [column 4, lines 48-67];

manipulating node information including configuration and security information [column 74 line 51 to column 75 line 60];

automatically assembling and configuring the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60];

remotely controlling at least one function of the plurality of network elements [column 74 line 51 to column 75 line 60]; and

providing secure interoperability among the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60].

Bowman-Amuah does not teach that at least one node includes at least one gateway node in the vehicle. Bowman-Amuah does not teach a gateway node comprising a first processor performing real-time processes and a second processor performing remaining processes other than the real-time processes.

Shostack et al teaches a node that comprises a first processor performing real-time processes [column 7, lines 37-65] and a second processor performing remaining processes other than the real-time processes [column 10, lines 11-49].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah so that there would have been a gateway node in the vehicle. The gateway node would have comprised a first processor that performed security functions in real-time and a second processor that performed the remaining processes in non-real-time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah by the teaching of Shostack et al because by using real-time updates, a user or system administrator is able to implement prevention techniques before a security breach occurs. This enhancement enables the system to be integrated in non-real-time into the computer security software [column 2, lines 31-47].

As to claim 68, Bowman-Amuah discloses an electromagnetic medium containing executable instructions which, when executed in a processing system, cause the processing system to internetwork components by:

coupling a plurality of network elements including at least one node and at least one vehicle bus among at least one peripheral electronic device [column 4, lines 48-67];

manipulating node information including configuration and security information [column 74 line 51 to column 75 line 60];

automatically assembling and configuring the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60];

remotely controlling at least one function of the plurality of network elements [column 74 line 51 to column 75 line 60]; and

providing secure interoperability among the plurality of network elements in response to the node information [column 74 line 51 to column 75 line 60].

Bowman-Amuah does not teach that at least one node includes at least one gateway node in the vehicle. Bowman-Amuah does not teach a gateway node comprising a first processor performing real-time processes and a second processor performing remaining processes other than the real-time processes.

Shostack et al teaches a node that comprises a first processor performing real-time processes [column 7, lines 37-65] and a second processor performing remaining processes other than the real-time processes [column 10, lines 11-49].

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah so that there would have been a gateway node in the vehicle. The gateway node would have comprised a first processor that performed security functions in real-time and a second processor that performed the remaining processes in non-real-time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bowman-Amuah by the teaching of Shostack et al because by using real-time updates, a user or system administrator is able to implement prevention techniques before a security breach occurs. This enhancement enables the system to be integrated in non-real-time into the computer security software [column 2, lines 31-47].

**8. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 10 above, and further in view of Bergkvist, Jr. et al U.S. Patent No. 5,535,380 (hereinafter Bergkvist).**

As to claims 11 and 12, the Bowman-Amuah-Shostack combination does not teach performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway. The Bowman-Amuah-Shostack combination does not teach performing high level processing functions using at least one application processor of the at least one gateway, wherein the at least one gateway further comprises at least one interface port. The Bowman-Amuah-Shostack combination does not teach controlling at least one high-speed bus of the at least one RTIP using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router.



Bergkvist teaches performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches performing high level processing functions using at least one application processor of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway further comprises at least one interface port [column 4, lines 15-60]. Bergkvist teaches controlling at least one high-speed bus of the at least one RTIP using at least one coupled device [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway functions as an Internet Protocol (IP) router [column 4, lines 15-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that there would have been real-time operations performed using at least one real-time interface processor (RTIP) of the at least one gateway. It would have been performed with high level processing functions using at least one application processor of the at least one gateway, wherein the at least one gateway would have further comprised at least one interface port. The high-speed bus would have been controlled using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Bergkvist because the RTIP eliminates the effect of various machine functions on latency in executing interrupt requests and which allows for programmability to permit adjustments for particular requirements [column 1 line 65 to column 2 line 2].

As to claim 13, the Bowman-Amuah-Shostack combination teaches that at least one item selected from a group consisting of a tag, a bridge, and an interface with the at least one interface port [Bowman-Amuah column 4 line 48 to column 5 line 7].

As to claim 14, the Bowman-Amuah-Shostack combination teaches at least one interface port includes at least one port selected from a group consisting of wired communication ports and wireless communication ports [Bowman-Amuah column 4 line 48 to column 5 line 7].

**9. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 10 above, and further in view of Bergkvist, Jr. et al U.S. Patent No. 5,535,380 (hereinafter Bergkvist).**

As to claim 19, the Bowman-Amuah-Shostack combination does not teach that at least one port node comprises at least one device selected from a group consisting of at least one micro real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device.

Bergkvist teaches at least one port node comprises at least one device selected from a group consisting of at least one micro real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device [column 4, lines 15-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that there would have been at least one port node comprises at least one device selected from a

group consisting of at least one micro real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Bergkvist because the RTIP eliminates the effect of various machine functions on latency in executing interrupt requests and which allows for programmability to permit adjustments for particular requirements [column 1 line 65 to column 2 line 2].

As to claim 20, the Bowman-Amuah-Shostack combination teaches the method further comprising:

coupling the at least one appliance interface to at least one sensor  
[Bowman-Amuah column 4 line 48 to column 5 line 7];

coupling the at least one communication interface to at least one radio  
[Bowman-Amuah column 4 line 48 to column 5 line 7].

**10. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 1 above, and further in view of Kirby U.S. Patent No. 6,829,437 B2.**

As to claims 22-24, the Bowman-Amuah-Shostack combination does not teach that at least one node comprises at least one hybrid switch. The Bowman-Amuah-Shostack combination does not teach that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. The Bowman-Amuah-Shostack combination does not teach that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port. The

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Bowman-Amuah-Shostack combination does not teach distributing at least one switching function among the plurality of network elements using the at least one hybrid switch. The Bowman-Amuah-Shostack combination does not teach coupling at least one application of a first type through the at least one port to the at least one switch of a first speed. The Bowman-Amuah-Shostack combination does not teach coupling at least one application of a second type through the at least one port to the at least one switch of a second speed.

Kirby teaches a node that comprises at least one hybrid switch [column 4, lines 41-54]. Kirby teaches that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 6, lines 52-63]. Kirby teaches that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port [column 6, lines 52-63]. Kirby teaches distributing at least one switching function among the plurality of network elements using the at least one hybrid switch [column 7, lines 19-60]. Kirby teaches coupling at least one application of a first type through the at least one port to the at least one switch of a first speed [column 7 line 66 to column 8 line 14]. Kirby teaches coupling at least one application of a second type through the at least one port to the at least one switch of a second speed [column 7 line 66 to column 8 line 14].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that a node that comprised hybrid switches. The hybrid switches would have included at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. There would have been at least one switch of a first speed and the at least one

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switch of a second speed that would be coupled to at least one port. At least one switching function would have been distributed among the plurality of network elements using the at least one hybrid switch. At least one application of a first type would have been coupled through the at least one port to the at least one switch of a first speed. At least one application of a second type would have been coupled through the at least one port to the at least one switch of a second speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Cox et al because the hybrid switches increase the bandwidth of data communication by optimizing the use of resources among nodes. It also reduces the analysis of data required in packet switching and effectively establishes circuit switching through high capacity optical switches [column 1 line 64 to column 2 line 9].

**11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 1 above, and further in view of Cox et al U.S. Patent No. 6,738,814 B1.**

As to claim 33, the Bowman-Amuah-Shostack combination does not teach that at least one security method includes blocking denial of service attacks by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node.

Cox et al teaches a method for blocking denial of service attacks by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node [column 4, lines 16-40].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that denial of service attacks would have been blocked by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Cox et al because by blocking denial of service attacks, it keeps from tying up a routing device [column 2, lines 9-12].

**12. Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 1 above, and further in view of Vasudevan et al U.S. Patent No. 6,715,077 B1.**

As to claims 48-50, the Bowman-Amuah-Shostack combination does not teach that the plurality of network elements comprise a plurality of application programming interfaces (APIs). The Bowman-Amuah-Shostack combination does not teach that the APIs include APIs for application support, database services, routing, security, network management, and deployment. The Bowman-Amuah-Shostack combination does not teach hosting the APIs for application support, database services, and routing on at least one gateway node. The Bowman-Amuah-Shostack combination does not teach sharing the APIs for security, network management, and deployment among at least one gateway node and at least one port node. The Bowman-Amuah-Shostack combination does not teach layering the plurality of APIs. The Bowman-Amuah-

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Shostack combination does not teach enabling distributed resource management by providing network resource information among the plurality of network elements. The Bowman-Amuah-Shostack combination does not teach establishing a synchronism hierarchy in response to the network resource information. The Bowman-Amuah-Shostack combination does not teach controlling information transfer among the plurality of network elements using the synchronism hierarchy.

Vasudevan et al teaches a plurality of network elements that comprise a plurality of application programming interfaces (APIs) [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches that the APIs include APIs for application support, database services, routing, security, network management, and deployment [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches hosting the APIs for application support, database services, and routing on at least one gateway node [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches sharing the APIs for security, network management, and deployment among at least one gateway node and at least one port node [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches layering the plurality of APIs [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches enabling distributed resource management by providing network resource information among the plurality of network elements [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches establishing a synchronism hierarchy in response to the network resource information [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches controlling information transfer among the plurality of network elements using the synchronism hierarchy [column 3 line 32 to column 4 line 42].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that there would have been a plurality of network elements that comprised a plurality of application programming interfaces (APIs). The APIs would have included APIs for application support, database services, routing, security, network management, and deployment. The APIs for application would have hosted support, database services, and routing on at least one gateway node. The APIs would have been shared for security, network management, and deployment among at least one gateway node and at least one port node. The plurality of APIs would have been layered. The distributed resource management would have been enabled by providing network resource information among the plurality of network elements. A synchronism hierarchy would have been established in response to the network resource information. Information transfer would have been controlled among the plurality of network elements using the synchronism hierarchy.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Vasudevan et al because allowing the more specific class to maintain its own data and context and relying on the base class to maintain the general data and context. Therefore, a programmer can reuse code that saves time and can write a more consistently organized program because there is less duplicate code. Each class is independent of other classes, even a subclass is independent of its base class (es), because the class does not need to know about the other classes' data.



**13. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah U.S. Patent No. 6,697,824 B1 and Shostack et al U.S. Patent No. 6,298,445 B1 as applied to claim 1 above, and further in view of Chittor et al U.S. Patent No. 5,987,552.**

As to claim 51, the Bowman-Amuah-Shostack combination does not teach supporting atomic transactions.

Chittor et al teaches a bus protocol for supporting atomic transactions [abstract].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination so that the buses would have supported atomic transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bowman-Amuah-Shostack combination by the teaching of Chittor et al because it allows for a number of bus transactions that will be completed without interruption [column 2, lines 14-27].

**14. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zintel U.S. Patent No. 6,779,004 B1 in view of Kirby U.S. Patent No. 6,829,437 B2.**

As to claim 69, Zintel discloses a method for host vehicle internetworking, comprising:

coupling a plurality of network elements in a vehicle including at least one node and at least one vehicle bus among at least one peripheral electronic device, wherein the at least one node includes at least one gateway node in the vehicle, the gateway node comprising a first processor performing real-time processes and

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a second processor performing high level processing functions [column 13, lines 38-67];

automatically assembling and configuring the plurality of network elements in response to the node information [column 13, lines 38-67];

remotely controlling at least one function of the plurality of network elements [column 13, lines 38-67]; and

wherein the at least one node comprises at least one hybrid switch, wherein the at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 13, lines 38-67].

Kirby teaches a node that comprises at least one hybrid switch [column 4, lines 41-54]. Kirby teaches that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 6, lines 52-63]. Kirby teaches that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port [column 6, lines 52-63]. Kirby teaches distributing at least one switching function among the plurality of network elements using the at least one hybrid switch [column 7, lines 19-60]. Kirby teaches coupling at least one application of a first type through the at least one port to the at least one switch of a first speed [column 7 line 66 to column 8 line 14]. Kirby teaches coupling at least one application of a second type through the at least one port to the at least one switch of a second speed [column 7 line 66 to column 8 line 14].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zintel so that a node that comprised hybrid switches. The hybrid switches would have included at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. There would have been at least one switch of a first speed and the at least one switch of a second speed that would be coupled to at least one port. At least one switching function would have been distributed among the plurality of network elements using the at least one hybrid switch. At least one application of a first type would have been coupled through the at least one port to the at least one switch of a first speed. At least one application of a second type would have been coupled through the at least one port to the at least one switch of a second speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zintel by the teaching of Cox et al because the hybrid switches increase the bandwidth of data communication by optimizing the use of resources among nodes. It also reduces the analysis of data required in packet switching and effectively establishes circuit switching through high capacity optical switches [column 1 line 64 to column 2 line 9].

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**15. Claim 70 is rejected under 35 U.S.C. 102(e) as being anticipated by Zintel U.S. Patent No. 6,779,004 B1.**

As to claim 70, Zintel discloses a method for internetworking, comprising:

coupling a plurality of network elements in a vehicle including at least one node and at least one vehicle bus among at least one peripheral electronic device [column 7 line 30 to column 8 line 36, wherein the at least one node includes at least one gateway node in the vehicle, wherein the plurality of network elements comprise a plurality of application programming interfaces (APIs) [column 13, lines 38-67];

automatically assembling and configuring the plurality of network elements in response to node information [column 13, lines 38-67];

layering the plurality of APIs [column 21, lines 15-55];

providing a network resource information among the plurality of network elements [column 21, lines 15-55];

establishing a synchronism hierarchy in response to the network resource information [column 21, lines 15-55]; and

controlling information transfer among the plurality of network elements using the synchronism hierarchy [column 21, lines 15-55].

*Conclusion*

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aravind K Moorthy  
August 30, 2006



CHRISTOPHER REVAK  
PRIMARY EXAMINER

 8/31/06